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ABSTRACT

In developing countries, the most important problem faced by the persons who are trying to force the pace of development is often a psychological one. The use of computers has spread in the private sector, public sector companies and government departments. However, propaganda against computers requires reconsideration of the role in developing countries. This paper outlines the following four major problem areas which vitally affect development and where the computer can be used to further development: infra-structure facilities, family planning, unemployment and data banks for economic planning. In developing countries, the future of the private sector is closely linked with the tempo of the development. By utilizing computer resources to assist development, the private sector will not only help the developing country, it will also help in ensuring its own existence and progress. (Author/AB)

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the role of private sector in applying computer technology to development in developing countries

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LI 003 161

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THE ROLE OF PRIVATE SECTOR IN APPLYING COMPUTER TECHNOLOGY TO DEVELOPMENT IN DEVELOPING COUNTRIES

1. Introduction

A. In developing countries, the most important problem faced by the persons who are trying to force the pace of development is often a psychological one. A typical dilemma is caused by the widening gap between the developed and the developing countries. In spite of great efforts and achievements which are impressive on the back ground of the past, the developing countries find themselves lagging by ever increasing margin when compared to the developed countries. This induces a sense of frustration as well as a tendency towards blind imitation in adoption of every new technological advancement irrespective of its validity or relevance to the socio-economic environments in the developing countries.

B. The most recent case in this respect has been the introduction of computers in the developing countries. Initially the computers were introduced largely in those companies which had strong ties with companies in the developed countries - e.g. in India, the subsidiaries of American and British companies were the foremost in the initial use of computers for commercial applications. Thereafter the use of computers has spread appreciably not only in other private sector companies, but also in the public sector companies and government departments.

C. However, the use of computer so far has been largely in areas which were considered significant in the developed countries - but which might be somewhat irrelevant in the peculiar circumstances of the developing countries. For example, applications where manpower requirement is significantly reduced by the use of computers can be very important in the developed countries - where the employment is generally a marginal problem. However, in countries like India, where unemployment amongst the educated is a problem secondary only to the food and population problem, use of computers to reduce clerical staff requirement has been actively resented. In fact, in certain cases, the installation of computers has been physically resisted. The propoganda against computers has reached a point where there is a possibility of total rejection of the computer - sort of "throwing the baby with the bath-water".

D. Thus, it is essential to reconsider the role of computers in developing countries. Instead of using this technological tool in blind imitation for exactly the same applications as in the developed countries, the choice of techniques has to be evaluated in the specific socio-economic environments of the developing countries. To reject the computer totally will be bad for the computer and sad for the developing countries. The developing countries must strive to utilise every technological advancement - otherwise the development gap will widen at a faster rate. Yet the utilisation of the technological advancement should be directed at

specific development problems so that it contributes directly to development - instead of contributing to the tensions which hamper development.

2. Role of Private Sector

A. The private sector will have to play an important role in this redirecting of the computer towards development. Apart from the moral responsibility arising out of the initiation of computers in the developing countries, the private sector will have to recognise its stake in increasing the pace of development. In many developing countries, the expectations aroused by the political processes are far outpacing the actual economic betterment. In such a situation, the very existense of private sector is in jeopardy since the cry for nationalisation under the garb of socialism can find a ready support with the masses. The recent nationalisation of banks in India is an apt warning that unless the private sector reorients its viewpoint to include the environmental problems, it might not enjoy a long life.

B. The resources available with the private sector in terms of computer time and computer personnel can be used more effectively for development - as compared to the corresponding resources in the public sector and government departments. The private sector has a tradition of better machine-utilisation and generally gets a better calibre of computer personnel due to better payment and working conditions. The calibre of computer personnel is particularly vital in the process of redirecting the computer for development.

C. In considering the specific areas of development, I have considered the problems in India due to limitations of my experience. Yet it is quite possible that some of these areas will be relevant to many other developing countries. This paper outlines the following 4 major problem areas which vitally affect development and where computer can be used to further development :

i. Infra-structure Facilities
ii. Family Planning
iii. Unemployment
iv. Data Banks for Economic Planning

3. Infra-Structure Facilities

A. Inadequate infra-structure facilities for urban areas is a universal problem in the world today. However, in developing countries, industrial development and the consequent urbanisation has become identical with ever-expanding slums due to lack of attention to the infra-structure facilities. Accommodation, transport, water, power, communication, etc. are becoming increasingly scarce and the urban areas are often in a state of continual crisis.

B. The computer is an ideal tool to assist in analysing this problem and in directing the limited resources available for urban development. It would also be possible to work out a computer model which can estimate the infra-structure investment for every proposed increase in industrialisation. This can help in levying an "infra-structure development fee". Since this fee will vary from place to place, it will help in spreading the industry - thus reversing the present tendency towards concentration in a few specific areas.

C. The infra-structure facilities are of a direct concern to the private sector and it should make its computer facilities available for this project.

4. Family Planning

A. Many developing countries are now fully awake to the population problem and are trying various methods for family planning. The problem is a huge one in a country like India and the resources available are relatively poor. Hence it is essential to find out the combination which will give the maximum return for the resources expended.

B. This involves collection and analysis of a large volume of data. The process will have to be continuous as the character of population using family planning methods will keep on changing as the coverage increases in area and depth. The data have to be quickly analysed if the analysis is to guide decisions. At present, the data are often not collected or, if collected, not systematically analysed. Even where they are analysed the time-lag between the incidence of information and the availability of its analysis to the policy-making authorities is very large. With the use of computers, prompt analysis of the data can ensure that the policy decisions are based on up-to-date data.

C. The private sector can assist in this project not only by providing its computer facilities, but also by allowing use of its communication network for prompt data transmission - similar to the use made by the government of the private sector distribution network in India for distribution of condoms.

5. Unemployment

A. In an underdeveloped country like India, unemployment has always been a problem. In the past, the problem was largely covered by 'underemployment' i.e. a person sharing work with others leaving spare capacity in all (in contrast to unemployment which leaves the total capacity of a person unutilised). When the masses were mostly illiterate, education gave a golden opportunity for employment and as such there has been an enormous pressure for education with employment as the sole objective.

B. During the last 22 years of independence, educational facilities expanded considerably in India. The employment opportunities did not keep pace and the problem of educated unemployed has been mounting up. The problem is much more severe compared to that of uneducated unemployed because :

i. It is difficult for an educated unemployed to become underemployed by sharing work with others as the employment for educated persons is largely through private or government establishments which do not permit such sharing of work. The uneducated unemployed, on the other hand, can share work more easily as it is largely in agricultural or unorganised industrial sector.

ii. The investment required for an educated unemployed to become 'self-employed' is appreciable and is beyond the resources of most of the educated unemployed. In contrast, the uneducated unemployed can become self-employed by a very little invstment e.g. purchasing a basket to become a 'coolie' or a shoe-shine box to become a shoe-shine boy.

iii. The educated unemployed expects a return on his investment of time and money on his education and resents his unemployed status. He is more vocal and as such wields a much greater political power. He is likely to <u>demand</u> employment - while the uneducated unemployed is likely to blame his 'kismet' for his unemployed status.

C. The situation is politically so dangerous that the problem of educated unemployed is likely to be "The Problem of the Seventies" for India which is barely tackling the food-and-population problem which proved to be "The Problem of the Sixties" for that country.

D. The private sector in the developing countries has so far left this problem for the government to worry about. However, the results have not been too encouraging and any further neglect of this problem can be suicidal. No industrial development can be stable on the top of a volcano. The private sector must look into this problem to ensure its survival.

E. Similar to the family planning problem, the problem of educated unemployed needs a huge amount of data to be collected and analysed continously. Various radical measures will have to be considered. The data processing as well as the model testing abilities of the computer will be ideal to analyse the problem and "simulate" the effect of various remedies.

6. <u>Data Banks for Economic Planning</u>

A. In India, the recession of 1967 revealed the fragility of the government data on which economic planning has been based. Not only the government plans received a serious set-back, but the private sector also got into serious financial difficulties as it had no other data to reorient its operations. The private sector should set up its own industry-wise data banks through the industry-wise associations to avoid recurrance of such a situation.

B. These data banks will be of immense value for economic planning. The present government efforts to collect all the relevant data have not been a conspicuous success due to the enormity of the job and the paucity of government resources in terms of equipment and calibre of man-power available for this purpose. Decentralisation of the task with initiative and responsibility with the private sector will go a long way to improve the situation.

7. Conclusion

A. This paper has outlined only some of the major areas in which the private sector can actively participate in development through its computerfacilities. There are other avenues of contribution which are already attracting the attention of the private sector. Some illustrations are :

i. Use of computer for reducing inventories - particularly of imported items - to conserve financial resources in general and foreign exchange in particular.

ii. Use of computer to maximise utilisation of production capacity. This also conserves resources - often involving foreign exchange.

iii. Use of computer for project management to minimise delays - thus allowing resources to be productive at the earliest.

B. In developing countries, the future of the private sector is closely linked with the tempo of development. By utilising its computer resources to assist development, the private sector will not only help the developing country, it will also help in ensuring its own existence and progfess.